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REMARKS

In the Office Action mailed March 2, 2005 the Examiner rejected claims 1-4, 7-11 and 14-16 under 35 USC 102(e) in view of US Patent 6,738,065 (the '065 patent). Further, the Examiner rejected claims 5-6 and 12-13 under 35 USC 103(a) over the '065 patent and in view of Shackleford et. al. US Patent 5970487 (the '487 patent). Even-Zohar deals exclusively with an Internet accessible computer animation system that provides access to large amounts of library data dealing with movement of the human body (Abstract, FIG. 1). The stated purpose of the '065 patent is to make these animation tools and databases usable by untrained users (Col. 7, lines 48-53) thus it is important that the user interface is easy to use. Underneath these animation tools and the user interface, the '065 patent discusses using Lagrange equations (Col. 4, lines 50-61), unspecified genetic algorithm based computing techniques and various other methodologies to create animation sequences (Col. 5, lines 13-22). This animation system provides animators with the tools to pay only for animation sequences they generate with the system over the Internet and not pay for the entire software system (Col. 4, lines 5-10). Unfortunately, the '065 does not provide a user interface to control the evolution of a genetic algorithm. Instead, the '065 patent describes in detail a business model for generating revenue from animators performing animation over the Internet (Col. 15, lines 55-63); there are no details given to implement any genetic algorithm or control them as claimed in the instant case.

The Examiner indicated that defining "genetic algorithm" more precisely would put the application in better condition for allowance and distinguish the application from the previously cited art. To further define a genetic algorithm, claims 1, 8 and 14, as amended now provides

that "a genetic algorithm that represents potential solutions to complex problems as one or more chromosomes and selects a solution from the potential solutions based on the chromosome that optimally solves the complex problem according to a fitness function" to assist in clarifying the meaning of this term. This should not only clarify the term genetic algorithm but also make it clear to the Examiner that the interface used for animation software as cited does not teach the interface in the instant case used for genetic algorithm analysis as recited in claim 1 and elsewhere.

In addition, the '065 patent does not describe a graphical user interface "displaying in a first portion thereof an evolution of a solution for genetic algorithm" as recited in Claim 1 as filed. Instead, Figure 3 and/or reference 370 of the '065 patent clearly illustrates a 3D wire frame model as the animation being performed. The '065 patent refers to this as "The Viewing Area 370" (Col. 12, lines 35-49) and describes it as having viewer play controls to play an animation, frame slider controls to skip to different frames of the animation and a total frame count to keep track of the frames in the animation. This is not a solution for a genetic algorithm but a rendering of a 3D wire frame model as used in an animation. Applicant respectfully submits there is no description or suggestion that Figure 3 and/or reference 370 displays anything concerning a genetic algorithm.

Similarly, the '065 patent also does not describe in Figure 3, reference 310 or elsewhere "an evolution parameter field in a second portion of said graphical user interface adjustable to assist in identifying the optimal solution to the complex problem represented using the genetic algorithm, said evolution parameter field having a first position, said evolution parameter field comprising at least one variable related to the evolution of said genetic algorithm towards the optimal solution" also recited in claim 1 as amended. As previously mentioned, Figure 3 is a user interface for creating animation sequences and solving problems related to animation but not for

finding a solution to genetic algorithms. These are two distinct areas. Indeed, the '065 patent indicates that reference 310 as "Blending Area 310" allows the user to change specific animation areas (i.e., head, shoulders, hands, feet, etc.) and does not even mention making changes to any genetic algorithm through parameters or otherwise. This fact is further reinforced in the '065 patent indicating that the user changes blending motions from different body parts (Col. 14, lines 1-7) or whatever animation may be in the blending area 310.

Applicant further submits that the '065 patent does not describe a "interface for modifying the evolution of said solution for said genetic algorithm in real time based upon an adjustment of said evolution parameter field from said first value to a second value" as recited in claim 1 as amended either. Instead, the '065 patent only displays an animation or animation sequence and the various user interface tools to manipulate the animation (Col. 12, line 66 et seq.). In particular, the slider bar in Figure 3 concerns modifying the degree that the head in the 3D animation of the figure is going to 'look up'. Moving the head up or down by way of a slider is not the same or even remotely equivalent to modifying the real time parameters used in a genetic algorithm solution.

With reference to claim 2 as amended, the '065 patent does not describe or suggest that "the modification interface used for the adjustment of said evolution parameter field is a slider" because the '065 patent concerns manipulating animation and not genetic algorithms. Similarly, the '065 patent does not describe or even suggest that the "modification interface to said evolution parameter is manipulated by a mouse, joystick, knob, or touchpad" as recited in amended claim 3 or that the "evolution parameter field is adjusted from said first value to said second value" as recited in claim 9 as amended. This is understandable as the '065 patent does not even mention an evolution parameter field in the abstract or in conjunction with genetic algorithms. In several

areas of the '065 patent it is clearly stated that the slider bar and other user interface components are used to modify individual body parts and manipulate motion sequences (Col. 7, lines 58-60). This usage precludes also using the slider bars for evolution parameters used in conjunction with a genetic algorithm as the genetic algorithm does not correspond to body parts.

The '065 patent also does not provide a variable related to the evolution of said genetic algorithm which "is a number of evaluations performed in said genetic algorithm during a run" as recited in amended claim 4 and claim 11. Instead, the '065 patent describes handling predictive algorithms (Col. 8, lines 61 to Col. 9, lines 1-6) using Lagrange equations and other methods. These methods described are not equivalent to genetic algorithm methods.

Further, the '065 patent does not teach or suggest that a "modification interface comprises a direct manipulation of said genetic algorithm as indicated by the adjustment of said evolution parameter field, said direct manipulation being accomplished by overwriting the at least one variable related to the evolution of said genetic algorithm" as recited in amended claims 7 and 10. As previously described, the '065 patent concerns animation and providing a simple to use interface for performing animation (Col. 7, lines 48-53). Further, all controls of the user interface concern animation and producing animation sequences not solutions to genetic algorithms (Col. 11, lines 1-68 and Col. 12, lines 1-68). There is no discussion of manipulating genetic algorithms by the '065 patent as it is concerned with animation and not genetic algorithms.

The Examiner also rejected 5-6 and 12-13 under 35 USC 103 in view of the '065 patent and further in view of US Patent 5,970,487 (the '487 patent). According to the Examiner, the '065 patent teaches a genetic algorithm producing real time results controlled by slider inputs but does not teach the probability of chromosome bits being cutpoints or mutations as recited in the instant claims. Unfortunately, '065 patent only discusses animation and does not teach or suggest

controlling any specific aspects of genetic algorithms; the only interface and control mentioned in the '065 patent concerns animation. Even though the '487 patent concerns genetic algorithms, it does not teach or suggest using a user interface to control its operation.

The Applicant respectfully submits that the '065 patent does not teach that slider inputs can be used to control genetic algorithms. As previously described, the slider inputs in the '065 patent clearly are for controlling a user interface designed specifically for animation (Col. 7, lines 48-53; Col. 11, lines 1-68 and Col. 12, lines 1-68). Even if there was a basis for such an assertion, the Examiner has provided no motivation to combine the '065 patent with the '487 patent to result in claims 5-6 and 12-13 as claimed. Instead, it appears that the Examiner has engaged in hindsight to combine these two references as the '065 patent clearly does not suggest the need for solving genetic algorithms or the need for a user interface to the same.

For at least the reasons provided above, claim 1 is in condition for allowance. Independent claims 8 and 14 are also in condition for allowance for similar if not the same reasons provided with regard to claim 1. Applicant has further clarified the term "genetic algorithm" as the Examiner has requested thus further distinguishing implementations of the present invention over the prior art. Dependent claims 2-7 and 9-13, and 15-16 are independently patentable and in addition remain patentable due to their dependency on independent claims 1, 8 and 14 respectively.

Included above is an updated version of the claims including amendments made in the instant office action response.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully

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requested that the Examiner telephone Leland Wiesner, Applicants' Attorney at (650) 853-1113 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

05/03/2005
Date

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